

550442

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number  
**WO 2004/083630 A2**

(51) International Patent Classification<sup>7</sup>:**F03D**

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/DK2003/000196

(22) International Filing Date: 21 March 2003 (21.03.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicant (*for all designated States except US*): VESTAS WIND SYSTEMS A/S [DK/DK]; Smed Sørensens Vej 5, DK-6950 Ringkøbing (DK).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): DAMGAARD, Søren [DK/DK]; Finlandsgade 17, DK-6950 Ringkøbing (DK). HAARH, Arne [DK/DK]; Fjordvang 16, DK-6950 Ringkøbing (DK). JENSEN, Nils, Bjørn [DK/DK]; Ludvig Schrøders Vej 5D, DK-6600 Vejen (DK).

(74) Agent: PATENTGRUPPEN APS; Aosgaarden, Aaboulevarden 31, DK-8000 Aarhus C (DK).

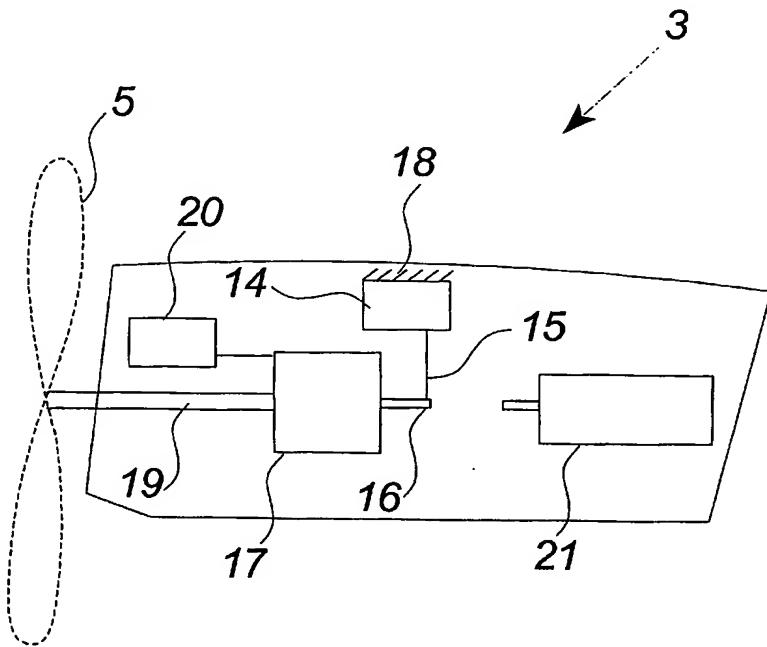
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS OF MOVING THE ROTATING MEANS OF A WIND TURBINE DURING TRANSPORTATION OR STAND STILL, METHOD OF CONTROLLING THE MOVING OF THE ROTATING MEANS, NACELLE, AUXILIARY DEVICE, CONTROL AND MONITORING SYSTEM AND USE HEREOF



(57) Abstract: The invention relates to methods of moving the rotating means of a wind turbine during transportation or stand still. The methods may comprise the steps of: securing at least one auxiliary device to a position and connecting said device to one or more shafts of the rotating means at the transportation or stand still. The auxiliary device being able to store, generate and/or convert energy during transportation, transferring energy continuously from said at least one auxiliary device to said one or more shafts of the rotating means during transportation or stand still, and moving said one or more shafts of the rotating means continuously or discontinuously from a position to another. The invention also relates to a nacelle for a wind turbine, an auxiliary device, a control system for controlling the moving of the rotating means of a wind turbine nacelle during transportation of the nacelle and use hereof.

WO 2004/083630 A2